Dear CASTNET Site Operator:

This message is your **CASTNET: Eye on Air Quality** newsbrief for Summer 2011
(best viewed in HTML format in your e-mail reader)

NETWORK NEWS

MACTEC merger with AMEC

In June 2011, the parent company of MACTEC Engineering and Consulting, Inc. (MACTEC) was acquired by AMEC, a leading international engineering, project management, and consulting firm with over 26,000 employees in 40 countries. The combination of AMEC and MACTEC creates an environmental and infrastructure services business unit of more than 7,000 professionals serving public and private clients worldwide. Both firms have similar business cultures, strong technical skills, complementary client bases, and minimal overlap in geography.

MACTEC is in the process of being rebranded as AMEC Environment & Infrastructure. Company personnel are working on the appropriate notifications and documentation needed to transition current projects, such as CASTNET, from MACTEC to AMEC. This merger will not disrupt CASTNET operations, though e-mail addresses for MACTEC contacts will soon be changed. However, the current MACTEC e-mail addresses will remain active for quite some time after the merger. MACTEC personnel will provide updates on the rebranding effort during the weekly site operator phone calls or through other communication, as needed.

AQS-protocol ozone installations complete

EPA requested that MACTEC install an ozone monitoring system compliant with 40 CFR Part 58 at all EPA-sponsored CASTNET sites that measure ozone. NPS-sponsored sites have been operating Part 58 compliant systems. An ozone system that conforms to Part 58 requirements allows the recorded ozone data to be submitted to EPA's Air Quality System (AQS) and used for compliance monitoring. MACTEC began this effort in July 2010, and installed the initial 19 sites prior to October 1, 2010. Data from these sites were evaluated, and protocols were refined prior to installing Part 58 compliant systems at the remaining sites. As of May 26, 2011, the effort was complete.

Site operators play an important role in maintaining Part 58 compliant ozone systems at both EPA and NPS-sponsored CASTNET sites (see related article and operator checklist in this issue). The main criteria used to validate the recorded ozone data are daily zero, span, and precision (ZSP) checks and shelter temperature. The criterion for an acceptable zero check is ± 10 parts per billion (ppb). Span and precision checks must be within ± 7 percent. The acceptable range for shelter temperature is 20 to 30 degrees Celsius, ± 2 degrees. If ZSP checks or shelter temperature exceed acceptable criteria or if other issues arise, site operators should contact MACTEC or ARS immediately, so MACTEC or ARS and the site operator can work together to resolve the problem quickly. Maintaining the integrity of the ozone system is a high priority for the network.

Kevin Mishoe becomes EPA-CASTNET Field Operations Manager

During May 2011, EPA approved Kevin Mishoe as MACTEC's CASTNET Field Operations Manager. Mr. Mishoe replaces Mark Hodges as MACTEC's Field Operations Manager. As the Field Operations Manager, Mr. Mishoe provides technical oversight for all EPA-sponsored CASTNET field operations. He is responsible for design and maintenance of all monitoring equipment, and he coordinates activities within the field operations group including site operations, equipment quality assurance audits, calibrations, and software development and maintenance for remote data acquisition. Mr. Mishoe was the technical lead for the CASTNET ozone system redesign, which was necessary for EPA-sponsored CASTNET sites to meet Air Quality System (AQS)-protocol requirements. He also directed the implementation of AQS-protocol installations and upgrades at CASTNET sites. Additionally, Mr. Mishoe participates in the publication of quarterly and annual network reports, prepares analyses for journal articles, and presents results at various national and international conferences.

If you need to contact anyone in the MACTEC Field Operations group, you can call 888-224-5663 and enter the extension number or the last four digits of the direct dial number. Direct dial numbers are:

Kevin Mishoe, P.E.	352-333-2602
Mike Smith	352-333-6620
Jeff Nelson	352-333-6635
Trey Harrison	352-333-6624
Heidi Schwing	352-333-3318, ext. 1432

Wildfire reaches CHA467

Wildfires in our Southwest are nothing unusual but those living in the region always heed them with caution and respect. The Horseshoe 2 Fire ravaged nearly a quarter-million acres in southeastern Arizona earlier this summer and came to be the fourth largest wildfire in state history. Part of the affected area included Chiricahua National Monument and its air quality station, CHA467.

While Station Operator Tina Thompson performed her weekly maintenance visit on June 14, she became aware the massive wildfire was only one mile away. She informed fire crews of the equipment operating at the station and asked them to clear away any brush and other materials that could fuel the fire. Fire personnel positioned a crew at the station and called for slurry drops as well.

The following day fire crews escorted Thompson back to the station to check its status. Fire came right up to the station but crews successfully kept the fire at bay. Quick thinking on Thompson's part saved the entire station and its equipment from total loss. (Photo by CHA467 site operator Tina Thompson)

OPERATOR TIPS & TRICKS

Operator checklist for flow and ozone

During each weekly visit, the site operator performs checks of CASTNET flow and ozone parameters. Check results outside of the listed criteria are an indication that the site operator needs to investigate the system and call the CASTNET field technician for instructions (NPS site operators should call ARS and EPA operators should call MACTEC). The technician will then guide the site operator through troubleshooting and corrective action as needed. Site operators should only perform instrument adjustments under the guidance of a CASTNET field technician. All site activities and observations are to be documented in the Site Narrative logbook and Site Status Report Form (SSRF) or DataView (NPS sites).

EPA-sponsored sites (using SSRF)

1. Record the ozone, zero, precision, and span results and their associated date on the SSRF. Span (400 ppb) and precision (90 ppb) checks must be within ± 7 percent of the reference value and zero checks must be ± 10 ppb for data to be considered as valid. (See related article on AQS-protocol ozone installations in this issue.)
2. Record the diagnostic parameters (pressure, temperature, flow rates, noise, and intensities) on the SSRF.
3. Down both ozone and flow channels.

NPS-sponsored sites (using DataView)

1. Down both ozone and flow channels.
2. Turn the flow system hour meter off. Record the hour meter count on the SSRF.
3. Turn the flow pump off. Let the value stabilize, and record the mass flow controller (MFC) display flow value in the "MFC (Pump Off)" box on the SSRF.

4. Turn the flow system hour meter off. Record the time of day as indicated by the data logger and the hour meter count in the site logbook.

5. Turn the flow pump off. Let the value stabilize, and record the mass flow controller (MFC) display flow value in the "MFC (Pump Off)" box on the SSRF.

6. Lower the flow tower. With gloved hands, remove, cap, and package the filter pack for shipping to MACTEC's Gainesville, FL analytical laboratory.

7. Turn the flow pump on. Let the value stabilize, and record the flow rate as indicated by the MFC display in the "MFC Leak Check" box on the SSRF. Turn the pump off.

8. Check flow and ozone sample lines and knockout bottles for water. Drain the lines and/or knockout bottle as appropriate and record observations. Please note: the sampling configurations at National Park sites do not include a knockout bottle.

9. Check the zero air system. Replace cartridge contents as needed.

10. Every other week, replace the Teflon filter in the ozone inlet and perform the ozone system leak check. Perform the leak check with the site analyzer and the on-site transfer standard in normal operation. Cap the sample probe inlet - the cell pressure should fall to or below 225 millimeters of mercury (mmHg).

11. Install the new flow system filter pack with gloved hands.

12. Raise the flow tower and turn the flow pump on. Turn the hour meter on and reset it.

13. Operators at NPS-sponsored sites only will perform a multipoint calibration for ozone once each month and call ARS to discuss the results.

14. Up the ozone and flow channels. Record the time indicated by the data logger in the site logbook.

15. Make your routine call to the CASTNET field technician. (EPA-sponsored sites.)

4. Lower the flow tower. With gloved hands, remove, cap, and package the filter pack for shipping to MACTEC's Gainesville, FL analytical laboratory.

5. Turn the flow pump on. Let the value stabilize, and record the flow rate as indicated by the MFC display in the "MFC Leak Check" box on the SSRF. Turn the pump off.

6. Check flow and ozone sample lines and knockout bottles for water. Drain the lines and/or knockout bottle as appropriate and record observations. Please note: the sampling configurations at National Park sites do not include a knockout bottle.

7. Check the zero air system. Replace cartridge contents as needed.

8. Every week, replace the Teflon filter in the ozone inlet.

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12. Up the ozone and flow channels.

In addition, summer is a great time to inspect your shelters and plan for needed maintenance while the weather is good. Generally, the network operations contractor will perform or arrange for the maintenance, but the station operator can be a big help by noting maintenance issues. Some maintenance will require planning and preparation. In particular, is the roof leaking? Floor sagging? Critters taking up residence? Or other structural concern of the shelter? How about the flow or met tower? Guy wires intact? Structural cracks or loose bolts?

Inside the shelter, is the tubing and wiring in good condition? Or need replacement or tidying up? Is the internal station temperature staying within limits? Please take a few minutes and inspect these and other areas and report your concerns to the network operations contractor. You've already mentioned it? Well do it again. Your request may have been overlooked or got down on the priority list, but you'll be doing your job by reporting it again. Don't be shy about reporting problems. We typically only make it to the stations twice a year and it helps us all to know what to expect.

Station safety concerns
As a reminder to everyone, seasonal changes often result in new hazards that may not have been on our minds just a few weeks ago. A few locations may have unique hazards such as a bothered bear, bison, or alligator, but summer brings out stinging insects and biting snakes just about everywhere. Obviously, please watch where you walk as you approach the shelter, and look up when you lower the filter tower. Snakes and wasps can take up residence quickly, and claim the cool area under the shelter or the pothead for their own. Do not, however, use any pesticides near the shelter without checking with your operations contractor. We don't want anyone stung, but we don't want to contaminate samples either.

Whenever at the station, keep in mind your personal safety and decisions you make. DO NOT climb the flow or meteorological tower for any reason, watch for overheating if you're doing outside maintenance, take your time, and stay hydrated and safe this summer.

OUTSTANDING SITES

National Park Service (NPS) sites that achieved 95%-100% validated ozone data for March 2011 through May 2011 and U.S. Environmental Protection Agency (EPA) sites that achieved 95%-100% validated ozone data for August 2010 through October 2010:

ALH157	CON186	KEF112	ROM206
ASH135	COW137	KNZ184	ROM406
BBE401	CVL151	LAV410	SAL133
BEL116	DCP114	LRL117	SAN189
BVL130	DEN417	LYK123	SEK430
BWR139	ESP127	MCK231	SHN418
CAD150	GLR468	MEV405	SPD111
CAN407	GRC474	MOR409	STK138
CDR119	GRB411	OXF122	UVL124
CDZ171	GRS420	PET427	VIN140
CHA467	GTH161	PIN414	VOY413
CHE185	HOX148	PND165	WSP144
CKT136	HWF187	PNF126	YEL408
CNT169	IRL141	PSU106	

Please contact us with topics and tips of what you want us to explore next time in your **CASTNET: Eye on Air Quality** newsbrief.

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For monitoring site assistance, please contact:
NPS CASTNET sites: contact Air Resource Specialists Telephone: 1-800-344-5423 (Mountain Time)
EPA CASTNET sites: contact MACTEC Telephone: 1-888-224-5663 ext. 2602 or ext. 6620 (Eastern Time)

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